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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/613,952	07/11/2000	Antti Lappetelainen	NC18815	1944

23990 7590 10/24/2002

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EXAMINER

D AGOSTA, STEPHEN M

ART UNIT PAPER NUMBER

2684

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/613,952	LAPPETELAINEN ET AL.	
	Examiner	Art Unit	
	Stephen M. D'Agosta	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.

- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.

- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 11 July 2000 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION***Drawings***

New corrected drawings are required in this application because they are not fully legible. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 2, 10 and 14: Point Control Function and Distributed Coordination Function and 802.11: The use of "protocols" or "standards", protocols and standards change over time, hence, it is inappropriate to have the scope of a claim change with time. Since organizations implementing standards meet regularly and have the authority to modify standards, any connection a claim may have to these standards may vary over time.

The other aspect arising from this is enablement. If the standard changes, the disclosure may no longer support the limitation. If the scope of the invention sought to be patented cannot be determined from the language of the claims, a second paragraph rejection is appropriate (In re Wiggins, 179 USPQ 421).

It is suggested that the PCF function, which appears to be taken from the 802.11 standard, should be changed to statement such as "a contention-free period" per the specification (pg. 3, L7-17). The specification goes on to say that this is a period when random access is not permitted (pg. 12, L4-12). This is how the examiner interprets the PCF function. Likewise for the DCF function being a contention period.

2. **Claim 14**: The term "operable generally pursuant" in claim 14 is a relative term which renders the claim indefinite. The term "operable generally pursuant" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. ***Re-write and clarification is required.***

3. **Claim 14** rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Reference to IEEE 802.11 standard critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). ***No details are given (in the specification or claims) which provide pertinent information regarding the PCF and DCF functionality. Also, the IEEE 802.11 standard was not included with the application.***

Specification

The attempt to incorporate subject matter into this application by reference to the IEEE 802.11 standard is improper because 1) **it has not been provided in the application and recorded in the IDS.**

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 8, 10-12, 14-17 and 20 rejected under 35 U.S.C. 102(e) as being anticipated by Raissinia et al. U.S. Patent 6,408,165 (hereafter referred to as Raissinia).

As per **claims 1 and 17**, Raissinia teaches a multi-user radio system having a network infrastructure with which a first mobile and at least a second mobile communicate data (figure 1), the data forming portions of communication signals transmitted at selected power levels (title – power regulation), an improvement of an assembly for facilitating selection of the power levels at which to transmit signals, said assembly comprising:

A signal generator coupled to the network infrastructure, said signal generator for generating a transmit power indication signal for transmission to at least a selected one of the first mobile and the at least second mobile, the transmit power indication signal of a value representative of a maximum allowable power level permitted of the selected power levels at which to transmit the communication signals (C3, L8-13 and C5, L54-67 to C6, L1-14).

With further regard to **claim 17**, Raissinia teaches generating a transmit power indication signal (C6, L5-14) and transmission to a first mobile and at least a second mobile station (C5, L44-52).

As per **claim 8**, Raissinia teaches claim 1 **but is silent on** wherein the power indication signal is generated during selected intervals.

Raissinia teaches that the power control system is based upon the measurement of received data transmissions (C6, L5-7) which tend to occur at irregular intervals. It would be a design choice to modify the invention such that the power indication signal is generated during selected intervals (ie. during contention-free periods, during contentious periods, etc.).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that the power indication signal is generated during selected intervals, to provide means for the system to define when the power indication signal should be generated instead of just having it happen at irregular/random intervals (eg. could mitigate creating interference to other users while they are transmitting).

As per **claims 10 and 20**, Raissinia teaches claim 1/17 **but is silent on** wherein radio system defines a distributed coordination function (DCF) period and wherein the transmit power indication signal generated by said signal generator is transmitted to all of the first and at least second mobile stations respectively.

The examiner points out that the applicant teaches the DCF period is derived from the IEEE 802.11 standard and is a mandatory function that defines a Contention Period (spec. pg. 3, L14-17). Hence one skilled in the art would use said standard as a basis for power control in an 802.11 wireless LAN.

Further to this point, Raissinia teaches a MAC protocol to prevent collisions (C4, L26-29) which suggests an Ethernet-based (wireless) LAN. Hence one skilled in the art would be able to define a DCF period wherein the power indication signal is transmitted to the mobile stations.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a DCF is defined and used to send the transmit power

indication signal, to take advantage of this functionality as defined in the 802.11 specification during contention communication periods.

As per **claim 11**, Raissinia teaches claim 1 **but is silent on** wherein radio system defines a contention period wherein the DCF period forms a portion thereof and wherein the transmit power indication signal generated by said signal generator is generated during the distributed coordination function period of the contention free period.

The examiner points out that the 802.11 standard, as referenced by the applicant, has contention-based AND contention-free access methods. Hence, one skilled in the art would transmit the power indication signal during the DCF period of the contention free period as a design choice.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a DCF is defined and used to send the transmit power indication signal, to take advantage of this functionality as defined in the 802.11 specification during contention communication periods.

As per **claim 12**, Raissinia teaches claim 11 wherein all of the first and second mobile stations transmit signals at power levels substantially corresponding to the maximum allowable power level indicated by the power indication signal (C5, L5-14).

As per **claim 14**, Raissinia teaches claim 1 **but is silent on** wherein the radio system is operable pursuant to an IEEE 802.11 standard which defines a PCF period and a DCF period and wherein the transmit power indication signal is transmitted in a first manner during PCF period and in a second manner during the DCF period.

The examiner points out that the 802.11 standard, as referenced by the applicant, has both contention-based (eg. DCF) AND contention-free access (eg. PCF) methods. Hence, one skilled in the art would transmit the power indication signal during both the DCF period an/or the PCF period as a design choice since both options are available per the standard.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that DCF or PCF periods are defined and used to send the

transmit power indication signal, to take advantage of these capabilities as defined in the 802.11 specification during contention/contention-free communication periods

As per **claim 15**, Raissinia teaches claim 14 wherein the first manner by which the power indication signal is transmitted comprises transmission to a selected one of the first mobile and at least second mobile station (C5, L44-52 for multiple stations and C6, L5-14 for power control).

As per **claim 16**, Raissinia teaches claim 14 wherein the second manner by which the power indication signal is transmitted comprises transmission to all of the first and at least second mobile stations (C5, L44-52 for multiple stations and C6, L5-14 for power control).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-4 and 18-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Raissinia in view of Krisnakumar et al. U.S. Patent 6,014,087 (hereafter referred to as Krishnakumar).

As per **claims 2 and 18**, Raissinia teaches claim 1/17 **but is silent on** wherein the radio system defines a point coordination function (PCF) period, and wherein the transmit power indication signal generated by said signal generator is transmitted to a single selected one of the first and at least second selected one of the mobile stations respectively.

The examiner points out that the applicant teaches the PCF period is derived from the IEEE 802.11 standard. Hence one skilled in the art would use said standard as a basis for power control in an 802.11 wireless LAN.

Further to this point, Raissinia teaches a MAC protocol to prevent collisions (C4, L26-29) which suggests an Ethernet-based (wireless) LAN. Hence one skilled in the art would be able to define a PCF period wherein the power indication signal is transmitted to the mobile stations.

Krishnakumar makes reference to an 802.11 wireless LAN and the Point Coordination Function (C1, L15-23).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a PCF period is used, to take advantage of this functionality as defined in the 802.11 specification during contention-free communication periods.

As per **claims 3 and 19**, Raissinia teaches claim 2/18 wherein the signal generator generates a power correction information signal for transmission to the mobile stations which contains a value representative of an amount at which the selected one of the mobile stations is to communicate the its signal (C6, L5-8).

As per **claim 4**, Raissinia teaches claim 2 **but is silent on** a contention free period, wherein the PCF forms a portion thereof and wherein the transmit power indication signal generated by said signal generator is generated during the PCF period of the contention free period.

The examiner points out that the applicant teaches the PCF period is derived from the IEEE 802.11 standard. Hence one skilled in the art would use said standard as a basis for power control in an 802.11 wireless LAN.

Further to this point, Raissinia teaches a MAC protocol to prevent collisions (C4, L26-29) which suggests an Ethernet-based (wireless) LAN. Hence one skilled in the art would be able to define a PCF period wherein the power indication signal is transmitted to the mobile stations.

Krishnakumar makes reference to an 802.11 wireless LAN and the Point Coordination Function (C1, L15-23).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a PCF period is used, to take advantage of this functionality as defined in the 802.11 specification during contention-free communication periods.

Claims 5-7, 9 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Raissinia in view of Krishnakumar et al. U.S. Patent 6,014,087 and further in view of Gourgue U.S. Patent 5,564,075 and Larsson et al. U.S. Patent 5,241,690 (hereafter referred to as Gourgue and Larsson).

As per **claim 5**, Raissinia teaches claim 4 **but is silent on** further comprising a mobile station power-level calculator positioned at one of the mobiles, said calculator operable responsive to the value of the transmit power indication signal and to the value of the power correction information signal to calculate a power level at which signals are to be generated.

Gourgue teaches power control whereby the mobile station can calculate/deduce an optimal power transmit value based on the measured broadcast channel (from the Base Station) and an estimated propagation loss [abstract].

Larsson teaches power regulation that provides a signal instructing either a power increase or power decrease (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that the mobile station has a power-level calculator, to provide means for it to determine a power at which to generate signals based upon the original transmit power indication signal and the power correction signal.

As per **claim 6**, Raissinia teaches claim 5 **but is silent on** wherein the power correction signal is a value responsive to the value of the transmit power information signal offset by the value of the power correction information signal.

Gourgue teaches power control whereby the mobile station can calculate/deduce an optimal power transmit value based on the measured broadcast channel (from the Base Station) and an estimated propagation loss [abstract].

Larsson teaches power regulation that provides a signal instructing either a power increase or power decrease (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that the power correction signal is responsive to the transmit power signal offset by the power correction signal, to provide continuous means for the transmitted signal to be optimally determined as the user roams or the environmental conditions change.

As per **claim 7**, Raissinia teaches claim 6 **but is silent on** wherein the radio system defines polling periods during which the network infrastructure polls a selected one of the first mobile stations and at least a second mobile and wherein the power correction information signal is transmitted to the selected one of the first and at least the second stations respectively, when the network infrastructure polls the selected one of the mobiles.

The examiner points out that the applicant teaches IEEE 802.11 as having the ability to poll the wireless terminals (page 3, L10-13). Hence one skilled in the art would use this knowledge for polling and power correction information transmittal.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that there is a polling period and the power correction signal is transmitted when a mobile is polled, to provide a contention-free capability (eg. via polling) and to simultaneously transmit power information during polling to optimize efficiency of the communications link bandwidth (eg. doing two operations at once).

As per **claim 9**, Raissinia teaches claim 8 **but is silent on** wherein the radio system defines beacon intervals within which beacon signals are broadcast and wherein the transmit power indication signal generated by said signal generator is broadcast as part of the beacon signals.

Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

As per **claim 13**, Raissinia teaches claim 11 but is silent on wherein radio system defines beacon intervals within which beacon signals are broadcast and where the transmit power indication signal generated is broadcast as part of a beacon signal.

Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Kamerman et al. U.S. Patent 6,067,291 teaches wireless LAN.
2. Schwartz et al. U.S. Patent 6,370,109 teaches CDMA power control.
3. Honksalo et al. U.S. Patent 5,995,496 teaches wireless packet power control.
4. Komatsu U.S. Patent 5,852,782 teaches transmission power control.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter can be reached on 703-308-6732. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist on: 703-306-0377.

SMD
October 15, 2002


WILLIAM CUMMING
PRIMARY EXAMINER
GROUP 2600